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9 September 2020

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Abstract[3]

The aim of the paper is to determine whether Tunisian Islamic and conventional banks are distinguishable from one another [on the basis of financial characteristics, in particular, profitability, liquidity, credit, insolvency risks] during 2005-2014 for a sample contains 16 banks (14 conventional and 2 Islamic).The comparison analysis between interest-free banks (IBs) and conventional banks (CBs) of bank specific factors reveals that there are differences between Islamic and conventional banks behaviour. Regression based Comparison analysis show that Interest-free banks are more profitable, more capitalized, more liquid and more stable but more riskier and less solvent than CBs. Large IBs are more profitable, more capitalized and riskier than small IBs. Small IBs have also lower Z-score than Large IBs. We conclude that the stability of IBs is attributed to size effect (Large IBs). Moreover, the stability of large IBs is driven by higher capitalization and liquidity. Across Tunisian banks, Zitouna bank is more stable while AL Baraka bank is riskier and more solvent. We find also that post Tunisian Revolution, there is no significant difference in terms of stability between IBs and CBs. However over the study period, IBs have lower insolvency risk and tend to be more capitalized and stable than CBs.

JEL classification: G01 G21 G28 G32 Z12
Keywords: Financial stability, Profitability, Liquidity, Credit and Insolvency risk, GFC 2008, TUN 2011, Size, Market share, Tunisia, interest-free banking.

Conflicts of Interest: The authors declare no conflict of interest.

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I. Introduction

Many countries currently experience a dual banking system where Islamic banks operate side by side with conventional banks. The first country which enjoyed a dual banking system is the United Arab Emirates where the Dubai Islamic Bank was established in 1973. The creation of the Dubai Islamic Bank was followed by the establishment of a large number of banks operating in various parts of the world on the same Islamic principles. In the last two decades, the number of Islamic banks significantly increased and their geographical spread has grown exponentially to cover all continents, especially in GCC countries and South Asia (Toumi, Viviani, & Belkacem, 2010).

According to (Global Islamic Finance Report, 2010), there are 614 registered Islamic financial institutions operating in 47 countries worldwide.

Our focus in this paper will be on Tunisia, country where the Islamic banking landscape consists of four Islamic banks offering only Islamic products. The first one is Al Baraka Bank Tunisia" established in 1983 after receiving an offshore banking license. The second one and the most developed is "Zitouna Bank" established in October 2009, "Zitouna Bank" is a universal commercial bank, which implements the laws governing banking in Tunisia. The third is a regional office "Noor Islamic Bank". It is a representative office from a financial institution based in Dubai. The fourth is Wifak bank created in 2015 following the transformation of the company "El Wifack Leasing" into a universal bank specialized in Islamic banking operations whose activity is governed by Law No. 2001-65 of 10 July 2001 on credit institutions. It is worth to note that since data are not available or are only partially available for Noor and Wifak banks, we consider the two major Islamic banks Zitouna and Al Baraka banks for empirical analysis.

IBs have the same functions of their conventional counterparts even if the nature and structure of their products are completely different. It is not allowed for IBs to be involved in transactions based on interest (*Riba*), uncertainty (*Gharar*) and speculations/gambling (*Qimar*). The basic difference between Islamic and conventional banks is that the former is based on profit and loss sharing mode of financing, at least on the liability side of their balance sheet (Obaidullah, 2005).

Our study investigates the differences between interest-free (Islamic) and conventional banks in terms of financial characteristics. 11 hypothesis will be

investigated. The first one is about profitability, the second is about liquidity, the third deals with insolvency risk, the forth is about stability, the fifth is about capitalization, the sixth tests the impact of 2008 GFC on IB, the seventh investigates the effect of 2011 Tunisian revolution on IBs, the eighth and ninth are about Islamic and conventional banks size, the tenth is about share market and the eleventh deals with the differences between Zitouna banks and Al Baraka bank.

This paper contributes to the empirical literature on interest-free finance by investigating the feature of interest-free (IB) and conventional banks (CB) using a sample of 16 banks (14 conventional and 2 Islamic) from Tunisia over the period 2005–2014. OLS technique is considered to run several linear regression models.

The reminder of this paper is organized as follow: Section II presents the literature review and hypotheses Development. Section III describes data and variables. The regression based Comparisons analysis is the subject of section IV. Section V concludes the paper.

II. Literature review and Hypothesis Development

In view of the rapid growth of Islamic banking, recent researches have examined and compared different aspects (profitability, liquidity, risk, etc.) of this banks and conventional ones using financial ratios ((Metwally, 1997); (Samad & Hassan, 2000); (Iqbal, 2001); (Hassoune, 2002); (Rosly & Bakar, 2003); (Samad, 2004); (Ahmad & Hassan, 2007); (Kader, Asarpota, & Al-Maghaireh, 2007); (Olson & Zoubi, 2008); (Srairi, 2010) (Khan, Ahmad, Ur Rahman, & Haleem, 2018)).

Our first hypothesis is about bank profitability. We use the return on assets (ROA) and the return on equity (ROE) as proxies for bank profitability.

The majority of previous studies report that IBs achieve higher records of profitability compared to conventional banks. (Samad & Hassan, 2000) reported that IBs outperform conventional banks in Malaysia. (Hassoune, 2002) showed also that IBs are more profitable than conventional ones with the same balance sheet structure. (Iqbal, 2001) found that IBs are doing fairly well compared to a benchmark sample of CBs. (Karim & Ali, 1989) and (Rosly & Abu Bakar, 2003) suggested that GCC IBs may be more profitable than other GCC banks. However, it may be possible that shareholders in IBs are willing to accept a lower return on equity. (Karim & Ali, 1989, p. 193) stated that IBs “opt for an increase in investment deposits rather than equity capital to fund their investments” under

conditions of "high strategic choice". During the financial boom experienced in the GCC in recent years, it makes sense for IBs to rely more upon deposits than equity.

(Olson & Zoubi, 2008) confirmed that IBs in GCC countries are more profitable and therefore reward shareholders with higher returns than CBs. However, they argue that the profit sharing principle of the saving deposits depends on future profits but the expected returns are similar to those of conventional saving deposits of the same maturity.

(Metwally, 1997) and (Ahmad & Hassan, 2007) reported different results. (Metwally, 1997) found that IBs do not seem to differ much in terms of the ratios of gross income to assets and the return on deposits. Both IBs and CBs offer their depositors similar returns. (Ahmad & Hassan, 2007) showed also that both types of banks have almost similar return on equity and return on asset in Bangladesh. Hence, we formulate our first hypothesis as follows:

H_1: IBs are more profitable than CBs.

Our second hypothesis is about liquidity. We use liquidity ratios cash to assets ratio and the cash to deposits ratio (CTA and CTD), as proxies for liquidity.

There is general consensus among the scholars that IBs usually have excessive liquidity due to inadequate investment opportunities (Basu, Prasad, & Rodriguez, 2015). On the liability side of the balance sheet, IBs receive deposits based on profit & loss sharing (PLS) on which they have to pay profit. On the other hand, they invest those funds on the asset side. Due to limited investment opportunities, they have high liquid assets so liquidity risk is very low. Therefore, IBs expose themselves to credit risk by extending loans through *Murabaha* and *Ijarah* in order to generate more profits, but the overall default risk would still be in control. It is not necessary that a bank with low liquidity/credit risk controls both risk together as it reflects a very limited overall risk of instability (Imbierowicz & Rauch, 2014). Hence, we formulate our second hypothesis as follows:

H_2: IBs hold higher liquidity than CBs.

Our **third hypothesis** is about credit and insolvency **risks**. We use **six indicators** : 4 of credit risk [the ratio of loan loss reserves to gross loans (LLR), Non-performing loans to gross loans (NPL), Loans to assets (LTA) and Loans to deposits (LTD)] and 2 for insolvency risk [Deposits to assets (DTA) and **Z-score**].

(Beck, Demirgüç-Kunt, & Merrouche, 2013) compared the business orientation, efficiency and stability of conventional and Islamic banks, with the mean Z-scores showing that IBs had significantly lower credit risk. However, when other factors were controlled, most of the results showed no significant difference between the two banking systems. Later, (Beck, Demirgüç-Kunt, & Merrouche, 2013) used NPL as a proxy for asset quality, and found that the NPLs of IBs were consistently lower value, suggesting lower credit risk in IBs.

(Boumediene, 2011), assessing credit risk in IBs using Merton's DD, concluded that IBs had relatively lower credit risk along with a lower probability of default.

In practice, IBs have shown a strong preference for fixed return modes of financing which are less risky. According to (Bourkhis & Nabi, 2013), in a typical IB, more than 80% of total assets are fixed income and short term maturity assets. While, only 20% are dedicated to long term and risk sharing investments. (El-Hawary, Grais, & Iqbal, 2007) and (Greuning & Iqbal, 2008) claimed that the dominance of less risky, low return assets deprives the bank of the benefits of portfolio diversification, as *Mudarabah* and *Mushrakah* contracts are more profitable. Analysts explain this behaviour by the fact that sale-based transactions are less associated with moral hazard and adverse selection problems than PLS investments (Siddiqi, 2006). In fact, the latter need additional effort to capture good investment opportunities and to analyse projects adequately. Besides, IBs cannot request for collateral to reduce credit risk. Thus, risk sharing investments require a high level of confidence and transparency between investors, banks and depositors. Hence, our next hypothesis is as follows:

H_3 : IBs are less risky than CBs.

Our **forth** hypothesis is about stability. The research employs the Z-score variable for comparison of stability between the both types of banking.

Following seminal work by (Čihák & Hesse, 2010), several other studies ((Gamaginta & Rokhim, 2011); (Abedifar, Molyneux, & Tarazi, 2013); (Beck, Demirgüç-Kunt, & Merrouche, 2013)) compared the relative stability of Islamic and conventional banks in different periods and across different countries. Some of this literature concluded that IBs are more stable while others find no evidence of differences in credit risk across the alternative banking systems.

(Čihák & Hesse, 2010) analyzed the financial stability of 19 banking systems, the sample being composed of 77 Islamic and 397 conventional banks between 1993 and 2004. The authors found that Small IBs tend to be more financially stable than Small CBs; Large CBs tend to be more financially stable than Large IBs; and the Small IBs tend to be more financially stable than the Large CBs. It also showed

that IBs are more exposed to difficulties in management and the increase of the market share of Islamic banking has no significant influence on the stability of other banks. The more IBs grow, the less stable they tend to become.

According to (Imam & Kpodar, 2010), the finding of (Čihák & Hesse, 2010) which stated that IBs tend to be less stable when operating at large scale shows that under certain conditions, the growing Islamic banking sector may not be beneficial for economic growth because it can weaken financial stability, especially in countries with lack of prudential regulations. Moreover, Imam and (Imam & Kpodar, 2010) argued that Islamic banking is more considered as a complement to the existing conventional banking and thereby help diversify the systemic risk.

(Gamaginta & Rokhim, 2011) analysed the stability of 12 Islamic banks and 71 conventional banks in Indonesia using during the period 2004-2009. The empirical results indicate that the stability of Islamic banks is generally lower than that of CBs except during the crisis period of 2008-2009 where the two categories of banks tended to have the same relatively degree of stability. They also found that Small IBs have the same level of stability as Small CBs.

(Rajhi & Hassairi, 2014) analyzed financial stability for 16 countries including ten countries in the MENA region and six countries in Southeast Asia, for a total of 467 conventional banks and 90 IBs between 2000 and 2008. Empirical results showed that the average levels of the stability of IBs measured by the proxy Z-scores are higher than CBs except for small IBs. These results are in contradiction with the results found by (Čihák & Hesse, 2010). The latter also show that credit risk and income diversity are the main reasons for the insolvency of IBs.

More research is needed to determine whether IBs can help contribute to establish a climate of financial stability. Hence, the fourth hypothesis to be tested is:

H4: IBs are less stable than CBs.

(Alkassim, 2005) investigated using the Ordinary Least Square (OLS) whether or not a bank's internal characteristics may explain the difference in profitability between Islamic and conventional banks in the GCC over the period 1997-2004. The results indicate that CBs were less profitable than IBs, and higher capital ratios favored IBs profitability.

(Beck, Asli, & Merrouche, 2010) compared the two types of banking and their performance across many countries, during recent crisis and conclude that though both types of banking were affected by the crisis, IBs had higher capitalization coupled with higher liquidity reserves, resulted in better performance of IBs.

(Parashar & Venkatesh, 2010) compared using ratio analysis conventional and Islamic banks performance in the GCC before and during the recent global financial crisis, and find that over the four-year period analysis from 2006 to 2009, IBs performed better than CBs in respect of profitability as indicated by higher average return on total assets and equity, and were higher capitalized as indicated by higher CAR ratio and higher equity to total assets ratio. Hence, the fifth hypothesis could be formulated as:

H_5 : IBs are more capitalized than CBs.

After subprime financial crisis, IBs got the attention of the academics and scholars to investigate performance, stability and risk management practices in order to check differences with conventional financial system ((Čihák & Hesse, 2010); (Hasan & Dridi, 2010); (bedifar, Molyneux, & Tarazi, 2013); (Beck, Demirgüç-Kunt, & Merrouche, 2013); (Kabir, Worthington, & Gupta, 2015)) and this stream of literature found Islamic banks to have lower credit risk, better asset quality and more stable as compare to CBs.

(Hasan & Dridi, 2010) examined the impact of the crisis on the profitability, credit and asset growth, and external ratings of 120 Islamic and conventional banks in eight countries covering the period (2007−2010) and document that IBs have been affected differently than CBs. They find that factors related to IBs, business model helped limit the adverse impact on profitability in 2008, while weaknesses in risk management practices in some IBs led to a larger decline in profitability in 2009 compared to CBs. Furthermore, the paper reveals that IBs‟ credit and asset growth rates were higher than that of CBs in 2008–2009, contributing to financial and economic stability and that external rating agencies, re-assessment of IBs, risk was generally more favorable.

However, (Bourkhis & Nabi, 2013) investigated stability during the 2007–2008 financial crisis using Z-scores (covering a matched sample of 34 IBs (IBs) and 34 CBs (CBs) from 16 countries), but found no significant difference. The finding reveals that IBs are diverging from their theoretical business model which would have allowed them to keep the same level of soundness even during the crisis. Hence, we formulate our hypothesis as follows:

H_6: IBs are affected by 2008 GFC.

Despite the potential and the strong internal demand, the successive Tunisian governments before January 2011 did not try to neither push forward nor promote the Islamic finance products among the population. For pure ideological reasons, the political authorities saw Islamic banking with suspicion before January 2011, because of its possible association with banned political parties (Beji, 2015).

The situation changed after January 2011, and an Islamic finance regulatory system which covers *Sukuk* issuance, insurance, banking, leasing and even *Zakat* and *Wakf* was discussed to be adopted by the Parliament by the end of 2012.

The government approved a *Sukuk* law in October 2014 to diversify the government's financing sources and to have an access to Islamic capital markets.

In July 2014, the National Constituent Assembly adopted a draft law regulating the insurance activities which facilitate the creation of Takaful legislative framework. During 2015, a common draft law for both Islamic and conventional banks and financial institutions was issued. Though both of them are continuing to operate under the same regulation, the first contracts with operations of Islamic finance have been defined. Furthermore, issues on banking establishment, operations, guarantee mechanism and depositor assets were discussed for the first time in a specific chapter within the mentioned draft law. Hence, we formulate our hypothesis as follows:

H_7 : IBs are affected by **2011 TUN revolution.**

(Čihák & Hesse, 2010) examined financial stability using Z-scores across Islamic and conventional banks in 20 countries over the period 1994–2004, classifying the banks as small or large. They present evidence that small Islamic banks tend to be financially stable than larger Islamic banks and small commercial banks, whereas large conventional banks were found to be stronger than large Islamic banks. These results show that as Islamic banks grow, risk management becomes more difficult, and this was because the credit risk monitoring systems in Islamic banks became more complex when operated on a larger scale.

(bedifar, Molyneux, & Tarazi, 2013) compared the credit and insolvency risk of 553 banks from 24 countries between 1999 and 2009, employing three different accounting ratios to measure credit risk and several forms of the Z-score to measure insolvency risk. Similar to (Čihák & Hesse, 2010), they found that small Islamic banks were more stable than conventional banks. Hence, we formulate our hypotheses as follows:

H_8 : **Small IBs** have different evolution than **Large** IBs.

H_9 : **Small CBs** have different evolution than **Large** CBs.

(Beck, Asli, & Merrouche, 2010) argued that CBs that operate in countries with a higher market share of IBs are more cost-effective but less stable.

(Čihák & Hesse, 2010) provided also a cross –country empirical evidence on the role of IBs in financial stability in 18 banking system and find that the market share of IBs does not have significant impact on the financial strength of other banks. They further find that the bank's size has a bearing on its financial strength.

Hence, we formulate our hypothesis as follows:

H_{10}: **High Share market IBs** have different evolution than CBs

Established in 1983 with an offshore banking licence, "BEST Bank" was allowed to conduct onshore banking activities in 1985 thank to an amendment to offshore legislation. Although, the bank should not hold deposits more than 1% of the total banking deposits. In 1999, "Bayt Al Tamwil El Saoudi Al Tounsi for Lease" was created as the first Islamic leasing company known as "BEST Lease". In January 1st 2010, the bank was renamed "Al Baraka Bank Tunisia" and in 2011, it submitted its application to become a resident bank in order to provide services to local customers. In 2013, "Al Baraka Bank Tunisia" became the 22nd resident bank forming the Tunisian banking system. "Al Baraka Bank Tunisia" is a subsidiary of "Al Baraka Banking Group" based in Bahrain which owns 80% of its capital. The remaining 20% are owned by the Tunisian State. In the mid-1980s, "Al Baraka Bank" played a key role in financing, via *Musharaka* technique, one of the most important real estate projects in Tunisia: "The Planning of Lac de Tunis" (Chaabouni & Ghanoudi, 2013).

Since 2014, the bank has launched a set of new financing and deposit products including student financing and study accounts. In the same year, the bank opened five new branches including three exchange offices. In 2013, the year of its conversion to a resident bank, "Al Baraka Bank" increased its financings and investment portfolios by 7% to reach US$ 599 million. This result is achieved thank to a rise by 24% to its *Murabaha* sales to reach US$ 287 million. The bank total assets stood at US$ 643 million at the end of 2014.

With a paid capital of US$ 30 million, "Zitouna Bank" was founded by the President's Ben Ali son in law in May 2009 and opened to public in May 2010. The second Islamic bank "Zitouna" is a domestic retail bank targeting the local

market. Mobilizing the classic Islamic finance techniques such as *Murabah*a, *Mudaraba* and *Ijara* the bank provides funding to real estate, equipment and tourist facilities (African Development Bank, 2011).

In 2012 and after the Revolution of January 2011, the Tunisian government took the control and the direction of the bank. In order to facilitate exchange of expertises and to improve the microfinancing techniques and know-how, the bank signed in April 2014 an agreement with Sub-Saharan Islamic banks (Guinea, Mauritania, Niger, Senegal and Sudan) (Thomson Reuters and Zawya, 2013). Hence, we formulate our hypothesis as follows:

H_{11} : **Zitouna** bank has different evolution than **Al Baraka** bank.

III. Data and variables

Our sample contains 16 banks (14 conventional and 2 Islamic). List of tunisian banks is given at Appendice, see **Table A 1** . We have 160 observations, or bank-years of data, for banks operating in Tunisia for the calendar years 2005–2014. There are 140 observations for conventional banks (CBs) and 20 observations for Islamic banks (IBs). 12 financial ratios are used in this study. All are defined in **Table 1**. we classify these ratios into six general categories: **profitability** ratios (ROA, and ROE), **liquidity** ratios (CTA, and CTD),[4] **credit** risk (LLR, NPL, LTA, LTD), **insolvency risk** (DTA), **Reglementary risk** (CAP), and asset **structure** ratios (FAA, OBSIA).[5] To ensure that our results were not driven by the presence of some outliers, we do correct all variables (we did not eliminate extreme values).[6] Definition of each ratio is given at **Table 1.**

For stability ratio measure, Z-score will be computed based on the formula presented by (Groeneveld & de Vries, 2009). In order to compute this score, they took into account the following indicators: ROA (return on assets), Equity to

[4] Liquidity means how quickly a bank can convert its assets into cash at face value to meet the cash demands of the depositors and borrowers.

[5] Regarding the later ratios, we use fixed assets to assets ratio, and off-balance sheet items to assets ratio to account for the operating leverage, and off-balance sheet activities, respectively. These ratios are used in the previous empirical banking literature (see, (Srairi, 2010) and (Ben Khediri, Charfeddined, & Ben Youssef, 2015)).

[6] To control for the remaining outliers, we'll use a **robust** estimation technique (an alternative method) as a superior estimation method, less sensitive to outliers, proposed by (Rousseeuw, Hampel, Ronchetti, & Stahel, 1986).

Assets ratio (ETA) and the standard deviation of ROA. Z-score is computed using the following formula: $Z_{it} = \frac{ROA_{it}+(EQ/TA)_{it}}{\sigma_{ROA}}$, where the subscripts 'i' and 't' represent individual banks and time period, respectively. As (Mercieca, Schaeck, & Wolfe, 2007) stated, the higher the Z-score, the more stable it is the bank.

Table 1: Definition of variables and expected signs for Z-score.[7]

Ratios	Definitions
Profitability	
ROA	Return on assets = Net income/Total assets
ROE	Return on equity = Net income/Stockholders' equity
Liquidity	
CTA	Cash to assets = Cash/Total assets
CTD	Cash to deposits = Cash/Total customer deposits
Credit risk	
LLR	Loans loss reserves to gross loans
NPL	Non-performing loans to gross loans
LTA	Loans to assets = Loans/Total assets
LTD	Loans to deposits = Loans/Total customer deposits
Regulatory risk	
CAP	Capital adequaty ratio
Insolvency risk	
DTA	Deposits to assets = Deposits/Total assets
Asset structure	
FAA	Fixed assets to assets = Fixed assets/Total assets
OBSIA	Off-balance sheet items to assets = Off-balance sheet items/Total assets
Dummies	
IB	Dummy variable equal to 1 if the bank is Islamic, 0 otherwise (i.e. Conventional banks (CB))
D2011	Dummy variable equal to 1 if year $\geq$ 2011
D2008	Dummy variable equal to 1 if year $\geq$ 2008
Bank caracteristics	
Size	Log(Total asset)
FAA	
OBSIA	
Market share	percentage of comparison between Islamic banks total asset and banks.[8]

[7] (Ben Khediri, Charfeddined, & Ben Youssef, 2015).

[8] Market share=Islamic bank total assets /Country banks total assets x 100%
See (Purboastuti, Anwar, & Suryahani, 2015) and (Aminah, Soewito, & Khairudin, 2019).

IV. Regression based Comparisons analysis

Different regression models are considered in this section. First, we Compare interest-free and CB controlling for *bank characteristics*. Second, we Compare IB and CB cross different *Size groups*. Third, we do analyse *cross countries* difference. Forth, we take account of *Market share* side for each type of banks. Fifth, we consider the effect of the Tunisian revolution 2011.

1. Controlling for Bank characteristics.

To assess differences in Profitability, Liquidity, Credit risk, Insolvency, and stability across different bank types, we run the following regression:

$$Y_{i,t} = \mu + \boldsymbol{\gamma IB_i} + \mu_t Y_t + \mu_i B_i + \boldsymbol{\delta}\, X_{i,t} + \pi D2008 + u_{it} \quad (1)$$

where $X_{i,t}$ is vector of Bank **caracteristics**,

$$X_{i,t} = (\mathrm{AGE}_{i,t}\ , \mathrm{Size}_{i,t}, \mathrm{Growth}_{i,t}, FAA_{i,t}, \mathrm{OBSIA}_{i,t})',$$

where

Age = Number of years since the bank was incorporated,

Size = Log(Total asset),

Growth = Log(Total assets) - Log(Total assets$_{-1}$),

$Y_{i,t}$ is one of our measures of Profitability, Liquidity, Credit risk, Insolvency, and stability of bank i, in year t, B_i are **Bank-fixed effects,** Y_t are **year-fixed effects,** IB_i is a **dummy** taking the value one for interest-free **banks**, $D2008$ is a dummy variable for GFC (taking the value one from year > 2008), and u_{it} is an error term. We thus compare IB and CB.

Taking account of bank characteristics, **Table 2** (see Appendix) gives the difference of effect of marginal effect of each variable on IBs vs CBs. All considered variables have significant difference effect except LLR. ROA, CTA, LTA, LTD, NPL, CAP, DTA, and Z-score have positive effects while ROE and CTD have negative effects.

The results in **Table 2** show that within banks and years, IBs have higher Return on assets (ROA) ratios but lower Return on equity (ROE) ratios (significant at the 1% level). Hence, **IBs are more profitable than CBs** which confirm the first hypothesis. This result is in line with results of (Samad & Hassan, 2000), (Samad,

2004) and (Olson & Zoubi, 2008). However, it may be possible that shareholders in IBs are willing to accept a lower ROE (Karim & Ali, 1989). The results also show that within banks and years, IBs have higher Cash to assets (CTA) ratios, but lower Cash to deposits (CTD) ratios, a coefficient estimate, however, that is significant only at the 10%, as is the difference in Non-performing loans to gross loans (NPL). We conclude that **IB's asset is more liquid than those of CB**'s as represented by CTA. This result confirms the second hypothesis. The finding is consistent with (Basu, Prasad, & Rodriguez, 2015).Whereas, CB has the better CTD ratio which means, CB asset contains more cash than its customer deposit compared to IB. We find also that IBs have 23% point higher Loans to assets (LTA) and 19% point higher Loans to deposits (LTD) (significant at the 1% level), 31% point higher Loans loss reserves to gross loans (LLR) while there is no significant difference. This result suggests that **IBs carry higher credit risk** compared to CBs. Hence, the third hypothesis is not confirmed. This result is not in line with finding of (Boumediene, 2011) and (Beck, Demirgüç-Kunt, & Merrouche, 2013). An explanation for this may be that "It is not permitted to stipulate any finanancial compensation, either in cash or in other consideration, as a penalty clause in respect of a delay by a debtor in settling his debt" (AAOIFI *Shariah* Standard No. 3).[9] Islamic scholars have differentiated two types of defaulters; those who are really in distressed situations (genuine insolvent debtors) and those who able to pay but refuse to meet their obligation (procrastinating solvent debtors). Whilst *Shariah* encourages the creditor to give leniency to the former, it allows for the punishments to be imposed on the latter. Nevertheless, when it comes to the practice, it is hard for IB to determine (without really looking at the details of the situations) whether the default arises from a genuine reason or otherwise (Hasan A. , 2013). The debtors would pay the CB first to avoid any late payment interest and would delay the payments to IB as long as they could, given that there is no punitive measures imposed on them by the IB. This indicates that the IBs should be able to manage credit supply by not excessively lending to risky sectors, which will only increase the credit risk exposures. We also find that IBs have higher Deposits to assets (DTA) ratios. This

[9] **AAOIFI Standard N° 3– Default in Payment by a Debtor:** The purpose of this standard is to explain the Shari'a rulings applicable to the transactions of Islamic Financial Institutions relating to delay on the part of solvent debtors in settling their debts, delay on the part of guarantors and contractors in fulfilling their obligations, and the ruling on the matter of penalty clauses. ».

result shows a **lower insolvency risk in CBs**. We also find that **IBs** have higher Z-score (significant at the 1% level) than CBs revealing that **the former are more stable than the latter**. Hence, the fourth hypothesis is not confirmed. (Abedifar, Molyneux, & Tarazi, 2013); (Beck, Demirgüç-Kunt, & Merrouche, 2013); (Miah & Uddin, 2017); and (Rajhi & Hassairi, 2014) suggest the same result. However, this result is in contradiction with finding of (Čihák & Hesse, 2010) and (Gamaginta & Rokhim, 2011). We also find that IBs have higher Capital adequacy ratios (CAP) which confirm the fifth hypothesis stipulating that IBs are more capitalized than CBs. This result is in line with those reported by (Alkassim, 2005), (Beck, Asli, & Merrouche, 2010) and (Parashar & Venkatesh, 2010).

2. Cross different Size

Now, we split the sample of all banks according to their asset **Size**. Specifically, we split the sample into banks above the 50th percentile (**Large** banks) and banks below the 50th percentile (**Small** banks). We therefore run the following regressions:

$$Y_{i,t} = \mu + \boldsymbol{\alpha}\,\mathbf{Small\_IB_i} + \boldsymbol{\delta}\,\mathbf{Small\_CB_i} + \mu_t Y_t + \mu_{\mathrm{i}} \mathrm{B}_i + \boldsymbol{\delta}\, X_{i,t} + \pi\, D2008 + u_{\mathrm{it}} \quad (2)$$

where Small_IB is an Inetraction term between **small** bank and IB (a dummy variable equal to 1 if IB is Small, 0 otherwise), and Small_CB is an Inetraction term between **small** bank and CB (a dummy variable equal to 1 if CB is Small, 0 otherwise), $Y_{i,t}$ is one of our measures of Profitability, Liquidity, Credit risk, Insolvency, and stability of bank i, in year t, B_i are **Bank-fixed effects,** Y_t are **year-fixed effects,** $D2008$ is a dummy variable for GFC (taking the value one from year > 2008), and u_{it} is an error term.

The results in **Table 3** (see Appendix) shows that there are significant differences between Islamic banks of different sizes and that many of the findings so far on differences between Islamic and conventional banks are driven by smaller Islamic banks. Here we split the sample of Islamic banks according to their asset size. Specifically, we split the sample into banks above the 50th percentile and banks below the 50th percentile.

Table 3 say that Small IBs have lower Return on equity (ROA) but higher Return on equity (ROE). Hence, **Large IB are more profitable than small IB** However, it may be possible that shareholders in Large IB are more willing to accept a lower ROE. The results provide also evidence that Small IBs have lower Cash to assets

(CTA) ratios but higher Cash to deposits (CTD) (significant at the 10% level) indicating that Large IB's asset is more liquid than those of Small IB. However, Small IB'asset contains more cash than its customer deposit compared to Large IB. We also find that Small IBs have a lower Capital adequacy ratios suggesting that **Large IBs are more capitalized**. Small IBs have lower Loans to assets (LTA) ratios and Loans to deposits (LTD) ratios (significant at the 1% level), lower Loans loss reserves to gross loans (LLR) while there is no significant difference. This result suggests that **Large IBs are riskier than Small IB**. We also find that **Small IBs have lower Z-score than Large IBs.** This result is not in line with those reported by (Čihák & Hesse, 2010) and (bedifar, Molyneux, & Tarazi, 2013). The comparative analysis allows us to conclusively confirm the hypothesis that Small IBs have different evolution than Large IBs.

We conclude that the stability of IBs can be attributed to size effect (Large IBs). Moreover, the stability of large IBs is driven by higher capitalization and liquidity.

Table 3 show also that Small CBs have higher Return on assets (ROA) and lower Return on equity (ROE). The difference is significant at the 1% level. Hence, **Small CBs are more profitable than Large CBs.** However, it may be possible that shareholders in Small CB are more willing to accept a lower ROE.
The results provide also evidence that Small CBs have higher (CTA) ratios, lower Cash to deposits (CTD) while there are no significant differences. Small CB's asset is more liquid than those of Large CB. However, Small CB'asset contains less cash than its customer deposit compared to Large CB. Contrary to Small IB, Small CBs have higher Loans to assets (LTA) ratios, higher Loans to deposits (LTD) ratios, higher Loans loss reserves to gross loans (LLR) and higher Non-performing loans to gross loans (NPL). This result suggests that **Small CBs are riskier than Large CBs**. This result shows that as CBs grow, risk management becomes more difficult. The credit risk monitoring systems in CBs became more complex when operated on a larger scale. We also find that Small CBs have higher Deposits to assets (DTA) ratios. This result reveals **lower insolvency risk in Large CBs.** Moreover, **Small CBs have higher Capital adequacy ratios (CAP) than Large CBs.** Our results support the ninth hypothesis that states a different evolution of Small and Large CBs.

3. Cross-Banks variation

To controll for individual **IB** caracteristic in assessing the differences across different bank types, we therefore run the following regression:

$$Y_{i,t} = \mu + \boldsymbol{\gamma_i IB_i} + \mu_t Y_t + \mu_{\mathrm{i}} \mathrm{B_i} + \delta\, X_{i,t} + \pi D2008 + u_{\mathrm{i}t} \quad (3)$$

where

IB is an Islamic Bank indicator,

$Y_{i,t}$ is one of our measures of Profitability, Liquidity, Credit risk, Insolvency, and stability of bank i, in year t, B_i are **Bank-fixed effects,** Y_t are **year-fixed effects,** $D2008$ is a dummy variable for GFC (taking the value one from year > 2008), and u_{it} is an error term.

OLS results of regression (3) for each group of considered measures are given at **Table 4** (see Appendix). We have two islamic banks : 39 ≡ AL Baraka and 52 ≡ Zitouna..

The results in **Table 4** show a cross-bank variation in the differences between Islamic and conventional banks. **Table 4** results suggest that AL Baraka Islamic bank has lower Return on equity (ROE) than others banks (significant at the 1% level), higher Return on assets (ROA) while there is no significant difference, higher (CTA) ratio, lower Cash to deposits (CTD) while there is no significant difference, higher Loans to assets (LTA) and Loans to deposits (LTD) ratios, higher Non-performing loans to gross loans (NPL) and higher Capital adequacy ratios (CAP) and lower Deposits to assets (DTA) ratios (significant at the 1% level) than others banks. **These results suggest that AL Baraka bank is less profitable and more risker but more capitalized and more solvent than others banks.** The results reveal also that Zitouna Islamic bank has higher Return on assets (ROA) and lower Return on equity (ROE) than others banks (significant at the 1% level), higher Cash to assets (CTA) ratios, lower Cash to deposits (CTD), lower Loans to assets (LTA) ratios, lower Loans to deposits (LTD) ratios, higher Deposits to assets (DTA) ratios (significant at the 1% level), higher Capital adequacy ratios (CAP) and higher Z-score than others banks. We find also that both Zitouna and AL Baraka Islamic bank have higher Loans loss reserves to gross loans (LLR) than others banks, while there are no significant differences. Across banks, Zitouna bank is less liquid, less riskier and less solvent, but more profitable, **more capitalized** and more stable. However, it may be possible that Zitouna' shareholders are more willing to accept a lower ROE. These results are consistent with the eleventh hypothesis that Zitouna bank has different evolution than Al Baraka bank.

4. Controlling for Market shares

Taking into account differences in **Market share**, we use additional specifications, including **interacting** the IB dummy with Hight Market share variable (Hshare). To do so, we split the sample all banks according to their Market share. Specifically, we split the sample into banks above the 50th percentile (**high** Market share banks) and banks below the 50th percentile (**Low** Market share banks). We use additional specifications, including **interacting** the IB dummy with high Market share dummy. We therefore run the following regression :

$$Y_{i,t} = \mu + \beta\, IB_i + \boldsymbol{\gamma}\, \mathbf{H}\boldsymbol{ShareIB_i} + \mu_t Y_t + \mu_{\mathrm{i}} \mathrm{B_i} + \delta\, X_{i,t} + \pi\, D2008 + u_{\mathrm{i}t} \quad (4)$$

where

$$HShareIB = \text{HShare} \times \text{IB},$$

$$\text{HShare} = 1 \text{ if Market Share} \geq \text{Median market share},$$

$$\text{Market share} = \text{Bank total assets /Country banks total assets} * 100\%,$$

$Y_{i,t}$ is one of our measures of Profitability, Liquidity, Credit risk, Insolvency, and stability of bank i, in year t, B_i are **Bank-fixed effects,** Y_t are **year-fixed effects,** IB_i is a **dummy** taking the value one for interest-free **banks**, $D2008$ is a dummy variable for GFC (taking the value one from year > 2008), and u_{it} is an error term.

OLS results of regressions (4) for each group of considered measures are given at **Table 5** (see Appendix).

The results in **Table 5** show significant variation in the differences between conventional and Islamic banks across banks and years with different market shares of Islamic banks. One of the reasons why we observe the cross-banks variation in differences between conventional and Islamic banks might be different relative market shares of conventional and Islamic banks.

The **Panel A** regressions of **Table 5** show that IBs have relatively lower ROE (profitability) than CBs with a higher market share of IBs. While IBs have higher LTA ratios (credit risk) than CBs, this difference increases as the market share of IBs decreases (significant at the 1% level). We also find that IBs have higher LTD (credit risk) with a lower market share of IBs, lower LLR with a lower market share of IBs ratios and lower NPL with higher market share of IBs than CBs. We continue to find that IBs have higher CAP (capitalization) but lower Z-score (stability) than CBs although these differences do not vary significantly with the market share of IBs.

In summary, some of the cross-bank variation in the differences between Islamic and conventional banks, established in **Table 5**, can be explained with differences in market shares for IBs.

Here, we control for bank size, age, growth and asset structure of banks, by including the fixed assets to assets (FFA) ratios and Off-balance sheet items to assets (OBSIA) ratios.

The **Panel B** results suggest that the lower ROE (profitability) of IBs visa-vis CBs is driven by markets with lower market shares of IBs. While IBs have higher LTA ratios (credit risk) than CBs, this difference increases as the market share of IBs decreases (significant at the 1% level). We find also that IBs have higher LTD (credit risk) with a lower market share of IBs, lower DTA (insolvency risk) with a higher market share of IBs ratios and higher NPL than conventional ones. We continue to find that IBs have higher CAP (capitalization) but lower Z-score (stability) than CBs although these differences do not vary significantly with the market share of IBs. We confirm so the tenth hypothesis that high Share market IBs have different evolution than CBs. This result is not in line with finding of (Čihák & Hesse, 2010) that the market share of IBs does not have significant impact on the financial strength of other banks.

5. During and Post TUN Revolution 2011

Taking into account GFC effect and time trend (long run effect) on IBs, We run the following regression:

$$Y_{i,t} = \mu + \beta\, IB_i + \boldsymbol{\gamma}\, \boldsymbol{IB2011_i} + \mu_t Y_t + \mu_i B_i + \mu\, _{IBTrend_i} + \delta\, X_{i,t} + u_{it} \quad (5)$$

where

$$\boldsymbol{IB2011_i} = \mathrm{IB_i} \times \boldsymbol{D2011},$$

$$\mathrm{IBTrend_i} = \mathrm{IB_i} \times \mathrm{Trend},$$

$\mathrm{Trend} = \mathrm{t}$, $Y_{i,t}$ is one of our measures of Profitability, Liquidity, Credit risk, Insolvency, and stability of bank i, in year t, B_i are **Bank-fixed effects,** Y_t are **year-fixed effects,** IB_i is a **dummy** taking the value one for interest-free **banks**, $D2011$ is a dummy variable for TUN revolution (taking the value one from year > 2011), and u_{it} is an error term.

OLS results of regressions (5) for each group of considered measures are given at **Table 6** (see Appendix).

Table 6 compares the relative performance of conventional and Islamic banks during and Post Tunisian Revolution 2011 to test whether one bank type is better positioned to political transition.

The **Table 6** results show lower ROE of IBs relative to CBs Post the Tunisian Revolution 2011. We do not find any significant difference between conventional and Islamic banks in their ROA, CTD, LTD, LLR or NPL.
We find also that post Tunisian Revolution, there is no significant difference in terms of stability between IBs and CBs. However over the study period, IBs have lower insolvency risk and tend to be more capitalized and stable than CBs.
An explanation for this may be that the customers' preference to Islamic banking products post Tunisian Revolution appears significant and it is essentially based on a motivation of compliance with the Islamic religion principles.

Conclusion

This paper provides a comparison between Tunisian Islamic and conventional banks on the basis of financial characteristics, in particular, profitability, liquidity, capitalization, stability, insolvency risks. The comparison analysis between interest-free banks (IBs) and conventional banks (CBs) of bank specific factors indicates that there are differences between Islamic and conventional banks behaviour. Regression based Comparison analysis show that IBs are more profitable and more liquid than CBs. However, CB'asset contains more cash than its customer deposit compared to IB. IBs carry higher credit risk compared to CBs. Results show also lower insolvency risk in CBs. IBs are more capitalized and stable than CBs.

Comparing Islamic and Conventional Banks cross different Size groups, we find that Large IBs are more profitable, more capitalized and riskier than small IBs. Small IBs have also lower Z-score than Large IBs. We conclude that the stability of IBs can be attributed to size effect (Large IBs). Moreover, the stability of large IBs is driven by higher capitalization and liquidity. Small CBs behave inversely to Small IB. Small CBs are more profitable more capitalized and riskier than Large CBs. Result reveals lower insolvency risk in Large CBs.

Moreover, results suggest that AL Baraka bank is less profitable and more riskier but more solvent than others banks. Across banks, Zitouna bank is less liquid, less riskier and less solvent, but more profitable and more stable. However, it may

be possible that Zitouna' shareholders are more willing to accept a lower ROE. Both banks are more than others Tunisian banks.

We confirm also the hypothesis that high Share market IBs have different evolution than CBs. Moreover, we find that post Tunisian Revolution, there is no significant difference in terms of stability between IBs and CBs. However over the study period, IBs have lower insolvency risk and tend to be more capitalized and stable than CBs.

A future study based on a larger sample and more advanced statistical tools covering all financial ratios of Tunisia would have allowed us a more powerful analysis.

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Appendix: Tables

List of banks

Table A 1 : List of banks (with code)

Conventional Banks	**Islamic Banks**
• 40 Banque Internt Arabe Tunisie, • 41 Banque Nationale Agricole, • 42 Société Tunisienne de Bank, • 43 Amen Bank, • 44 Banque de l'Habitat, • 45 Attijari Bank, • 46 Arab Tunisian Bank, • 47 Banque de Tunisie, • 48 Union Internl de Banque, • 49 Union Bancaire Comrce et l'Industrie, • 50 North Africa International Bank – NAIB, • 51 Arab Banking Corporation – Tunisie, • **53 Alubaf International Bank,** • 54 Banque Franco-Tunisienne,	• 39 Albaraka Bank Tunisia, • 52 Banque Zitouna

Regression Analysis results

Table 2 : Comparing Islamic and conventional banks – controlling for bank characteristics –.Equation (1).

	Profitability		Liquidity			Credit risk
Variable	**Return on assets ROA**	**Return on equity ROE**	**Cash to assets CTA**	**Cash to deposits CTD**	**Loans to assets LTA**	**Loans to deposits LTD**
IB	.01376627***	-.58432157***	.03662932*	-.23781948*	.23223847***	.19257078***
Size	-.03527788***	1.2384483***	-.086113***	.47951138*	-.0114741	.04957367
AGE	-.00209698***	.15092366***	-.00991444***	.0535007*	-.0004246	-.02719005***
Growth	.05490433***	-.70845293***	.41417362	.08844247	.07533632	.00948226
FAA	-.20820837**	-.15319926	-.40796743	-1.1576888	1.6046999	8.8019262***
OBSIA	.00432914	-.10205214	.04823151	.04380547	-.02036791	.10438804
_cons	.13844752***	-5.7414665***	.38162836***	-2.1498206*	.28459784	.8413741***
N	68	68	68	65	62	62
R^2	.91172526	.98542583	.57572664	.5673408	.85519381	.8668945

	Credit risk		Regulatory risk	Insolvency	Stability
Variable	**Loans loss reserves to gross loans LLR**	**Non-performing loans to gross loans NPL**	**Capital adequacy ratio CAP**	**Debt to assets DTA**	**Zscore**
IB	.31458575	3.3032255*	.29304455***	.16931071**	74.348892***
Size	.05912734	4.4462299**	-.05273204***	.01818732	-25.631379***
AGE	.01751645*	-.12172771*	.00905375**	.01574695***	.26602718
Growth	.12053668	-3.3565102*	.17962739	.3804908	34.728164***
FAA	-.35767576	-13.148361	-1.4318501	1.3849846	-317.68024**
OBSIA	.08869682	-.56942943	.04964595	-.16333564*	10.074623
Trend	.00410145	.03439549**	.00252759***	.00335917***	.61875713***
_cons	-2.3298587	-24.097995**	-1.1639017***	-1.8019052***	-254.31614***
N	44	29	68	68	68
R^2	.85092168	.8598928	.82648402	.9007615	.96218668

Legend: * p<.1; ** p<.05; *** p<.01.

Table 3 : Comparing Islamic and Conventional Banks cross different Size groups. (large vs small) –.Equation (2).

	Profitability		Liquidity			Credit risk
Variable	**Return on assets ROA**	**Return on equity ROE**	**Cash to assets CTA**	**Cash to deposits CTD**	**Loans to assets LTA**	**Loans to deposits LTD**
Small_IB	-.17896147***	7.5961804***	-.47618121*	3.0916533*	-3.0191001***	-2.5034201***
Small_CB	.09817607	-2.2305608***	.10103594	-1.2285474*	2.861374***	1.7807591*
size	-.03527788***	1.2384483***	-.086113***	.47951138*	-.0114741	.04957367
AGE	.00478615*	-.14123713***	.00840022	-.06540904*	.11569463***	.06909534**
Growth	.05490433***	-.70845293***	.41417362	.08844247	.07533632	.00948226
FAA	-.20820837**	-.15319926	-.40796743	-1.1576888	1.6046999	8.8019262***
OBSIA	.00432914	-.10205214	.04823151	.04380547	-.02036791	.10438804
_cons	.07468712	-4.9717096***	.37216572	-1.5158219*	-1.9961799***	-.45795806
N	68	68	68	65	62	62
R^2	.91172526	.98542583	.57572664	.5673408	.85519381	.8668945

	Credit risk		Regulatory risk	Insolvency	Stability
Variable	Loans loss reserves to gross loans LLR	Non-performing loans to gross loans NPL	Capital adequacy ratio CAP	Debt to assets DTA	Zscore
Small_IB	-.4230636	(omitted)	-.3940944***	-.22769371**	-99.986441***
Small_CB	.70965511**	3.4325529*	. 37319363**	.60852052***	-8.978901
size	.05912734	4.4462299**	-.05273204***	.01818732	-25.631379***
AGE	.02294034***	-.06477555	.01410624**	.0186661***	1.5479046**
Growth	.12053668	-3.3565102*	.17962739	.3804908	34.728164***
FAA	-.35767576	-13.148361	-1.4318501	1.3849846	-317.68024**
OBSIA	.08869682	-.56942943	.04964595	-.16333564*	10.074623
Trend	.00193189***	.01161462***	.0005066**	.00219151***	.10600616***
_cons	-1.5978432	-16.834931**	-.1941429	-1.6345156***	95.385786***
N	44	29	68	68	68
R^2	.85092168	.8598928	.82648402	.9007615	.96218668

Legend: * p<.1; ** p<.05; *** p<.01.

Table 4: Comparing Islamic and conventional banks, testing for cross-Banks variation. (2 banques islamiques) –.Equation (3).

	Profitability		Liquidity		Credit risk	
Variable	Return on assets ROA	Return on equity ROE	Cash to assets CTA	Cash to deposits CTD	Loans to assets LTA	Loans to deposits LTD
Bank						
39 AL Baraka	.00538564	-.27593704***	.02304106	-.11197916	.37130652***	.27937746***
52 Zitouna	.11433377***	-4.2849359***	.19968854**	-1.7479033*	-1.4365781***	-.84910945**
size	-.03527788***	1.2384483***	-.086113***	.47951138*	-.0114741	.04957367
AGE	.00209333**	-.00326861	-.00312031	-.00941946	-.06995863***	-.07059339***
Growth	.05490433***	-.70845293***	.41417362	.08844247	.07533632	.00948226
FAA	-.20820837**	-.15319926	-.40796743	-1.1576888	1.6046999	8.8019262***
OBSIA	.00432914	-.10205214	.04823151	.04380547	-.02036791	.10438804
_cons	.05045096***	-2.5034289***	.23895154***	-.82849727	1.7448123***	1.7528443***
N	68	68	68	65	62	62
R^2	.91172526	.98542583	.57572664	.5673408	.85519381	.8668945

	Credit risk		Regulatory risk	Insolvency	Stability
Variable	Loans loss reserves to gross loans LLR	Non-performing loans to gross loans NPL	Capital adequacy ratio CAP	Debt to assets DTA	Zscore
Bank					
39 AL Baraka	.26339443	3.3032255*	.2732494**	-.69145507***	-14.033205
52 Zitouna	.33223793		.29987046***	.4661265***	104.82548***
Size	.05912734	4.4462299**	-.05273204***	.01818732	-25.631379***
AGE	.01839906**	-.12172771*	.00939504**	.03058774***	1.7898564***
Growth	.12053668	-3.3565102*	.17962739	.3804908	34.728164***
FAA	-.35767576	-13.148361	-1.4318501	1.3849846	-317.68024**
OBSIA	.08869682	-.56942943	.04964595	-.16333564*	10.074623
Trend	.00374841**	.03439549**	.00239108**	-.00257714**	.00922543
_cons	-2.1641047	-24.097995**	-1.0998064*	.98519504	31.858995
N	44	29	68	68	68
R^2	.85092168	.8598928	.82648402	.9007615	.96218668

Legend: * p<.1; ** p<.05; *** p<.01.

Table 5 : Comparing Islamic and conventional banks – controlling for market shares–.Equation (4).

Panel A

	Profitability		Liquidity			Credit risk
Variable	**Return on assets ROA**	**Return on equity ROE**	**Cash to assets CTA**	**Cash to deposits CTD**	**Loans to assets LTA**	**Loans to deposits LTD**
IB	.14228643	-.45065283*	-.05294027	-.16391412	.39110442***	.47739782***
HIBShare	.61019215***	6.181197***	-.0142166	-.34728704	-11.544664***	-36.245484***
_cons	-.11029212	.09290174	.07492932	.15458922	.13771639***	.16535186**
N	122	122	122	118	113	113
R^2	.32675916	.53111333	.29891923	.26302029	.80274109	.77412663
F	5.0879173	4.7189396	28.840994	13.556027	269.89742	3867.8387

	Credit risk		Regulatory risk	Insolvency	Stability
Variable	**Loans loss reserves to gross loans LLR**	**Non-performing loans to gross loans NPL**	**Capital adequacy ratio CAP**	**Debt to assets DTA**	**Zscore**
IB	-4.1892988***	-10.397839***	.42085497**	2.3327487	-291.15394***
HIBShare	-7.6076944***	21.074638***	-1.1915991	.33701545	10.092945
Trend	-.02853792***	-.0695206***		.01848427	-2.0076828***
_cons	15.124593***	36.992419***	-.20605471	-9.3449261	1064.0627***
N	69	38	122	122	122
R^2	.82770739	.71797384	.57526069	.67256012	.90188246
F	.	.	11.025971	21.290304	144.48373

Legend: * p<.1; ** p<.05; *** p<.01.

Panel B

	Profitability		Liquidity			Credit risk
Variable	**Return on assets ROA**	**Return on equity ROE**	**Cash to assets CTA**	**Cash to deposits CTD**	**Loans to assets LTA**	**Loans to deposits LTD**
IB	.00538564	-.27593704***	.02304106	-.11197916	.37130652***	.27937746***
HIBShare	.27582994***	-10.149802***	.44722811*	-4.1417588**	-4.5771205***	-2.8570521***
Size	-.03527788***	1.2384483***	-.086113***	.47951138*	-.0114741	.04957367
AGE	.00209333**	-.00326861	-.00312031	-.00941946	-.06995863***	-.07059339***
Growth	.05490433***	-.70845293***	.41417362	.08844247	.07533632	.00948226
FAA	-.20820837**	-.15319926	-.40796743	-1.1576888	1.6046999	8.8019262***
OBSIA	.00432914	-.10205214	.04823151	.04380547	-.02036791	.10438804
_cons	.05045096***	-2.5034289***	.23895154***	-.82849727	1.7448123***	1.7528443***
N	68	68	68	65	62	62
R^2	.91172526	.98542583	.57572664	.5673408	.85519381	.8668945

	Credit risk		Regulatory risk	Insolvency	Stability
Variable	**Loans loss reserves to gross loans LLR**	**Non-performing loans to gross loans NPL**	**Capital adequacy ratio CAP**	**Debt to assets DTA**	**Zscore**
IB	.26339443	3.3032255*	.2732494**	-.69145507***	-14.033205
HIBShare	.17429487	(omitted)	.06739801	2.9307127***	300.92104***
Size	.05912734	4.4462299**	-.05273204***	.01818732	-25.631379***
AGE	.01839906**	-.12172771*	.00939504**	.03058774***	1.7898564***
Growth	.12053668	-3.3565102*	.17962739	.3804908	34.728164***
FAA	-.35767576	-13.148361	-1.4318501	1.3849846	-317.68024**
OBSIA	.08869682	-.56942943	.04964595	-.16333564*	10.074623
Trend	.00374841**	.03439549**	.00239108**	-.00257714**	.00922543
_cons	-2.1641047	-24.097995**	-1.0998064*	.98519504	31.858995
N	44	29	68	68	68
R^2	.85092168	.8598928	.82648402	.9007615	.96218668

Legend: * p<.1; ** p<.05; *** p<.01.

Table 6 : Comparing Islamic and conventional banks during and Post TUN Revolution 2011–.Equation (5).

	Profitability		Liquidity			Credit risk
Variable	**Return on assets ROA**	**Return on equity ROE**	**Cash to assets CTA**	**Cash to deposits CTD**	**Loans to assets LTA**	**Loans to deposits LTD**
IB	-.4874208	-2.7069843	-2.2733492	-3.3213903	-14.529619*	-16.068414
IB*2011	.00290249	-4.545168***	1.3492151**	(omitted)	-.58356448	-1.1075043
IB*Trend	.001266	.00712124	.00531932	.00784565	.03758375*	.04158041
Size	-.03228188	-.19879422	.35268502*	.45134848*	-.13008476	-.22924553
AGE	.00468771	.0267412	.06617794*	.0903295**	.17865979*	.15438406
Growth	.05419417*	.35689201	.09775564	.11840647	.1858551	.24129437
FAA	-.20775333**	-.21803137	-.38630232	-1.1570346	1.3875083	8.5172091**
OBSIA	.00461313	-.03459674	.03012108	.04768183	-.01073261	.11878026
_cons	-.01006993	-.07269745	-2.1488334*	-2.86119**	-3.2135897	-2.3668583
N	68	68	68	65	62	62
R^2	.91308646	.99107928	.63676038	.57032318	.85919634	.86887103

	Credit risk		Regulatory risk	Insolvency	Stability
Variable	**Loans loss reserves to gross loans LLR**	**Non-performing loans to gross loans NPL**	**Capital adequacy ratio CAP**	**Debt to assets DTA**	**Zscore**
IB	.53909752	29.231427	-4.679827**	-14.185883***	-589.56652*
IB*2011	-.11247599	(omitted)	-.79618625*	-1.0240437	39.216015
IB*Trend	-.00047448	-.06643361	.0115398**	.0311957***	1.2989946*
Size	.06107324	4.6262797*	-.28766182*	-.25722743	-11.00553
AGE	.01677479	-.12165354*	.0212314**	.06037447***	2.9736986**
Growth	.11883339	-3.5152698*	.36600431**	.61982218**	25.504348
FAA	-.34857719	-9.894058	-1.4398561	1.3800114	-316.67796**
OBSIA	.08834662	-.56401441	.06411168	-.14052039*	9.8428126
Trend	.00439649	.03733257*	-.00154993	-.01335351*	-.48995754
_cons	-2.4726792	-26.101396*	1.2119402	6.5794519**	236.78864
N	44	29	68	68	68
R^2	.85092502	.86543715	.83768483	.91242768	.96319389